Bharatiya Vidya Bhavan's

SARDAR PATEL COLLEGE OF ENGINEERING

(Government Aided Autonomous Institute under Mumbai University)

Andheri (W), Mumbai - 400058

M. Tech. in Power Electronics and Power System (PEPS)
Department of
Electrical Engineering

Academic Evaluation Scheme/Credit System

Year: 2025-26

Regulation 23 (R23)

Sardar Patel College of Engineering Andheri (West), Mumbai 400 058
Year: 2025-26

Scheme for F.Y. M. Tech. in Power Electronics and Power System (PEPS), (Semester - I) R23 Academic Year 2025-26															
SR. NO.	**Course Name**	**Code**	**Course Plan per Week (Hrs)**			**SL Hrs/ Sem**	**Credits**	**In Semester Evaluation**			**End Semester Evaluation**		**End semester weightage (%)**	**Total Points**
			L	**P**	**T**			**Mid Term (Points)**	**Mid Term Duration (Hrs.)**	**IE**	**Points**	**Time (Hrs.)**		
	Theory Courses													
1	Advanced Power Electronics	PC-MTPX101	3	--	0	48	3	30	1.5	20	100	3	50%	100
2	Computer Aided Power System Analysis	PC-MTPX102	3	--	0	48	3	30	1.5	20	100	3	50%	100
3	Research Methodology and IPR	PC-MTPX103	2	--	1	48	3	30	1.5	20	100	3	50%	100
Program Elective Courses														
4	Program Elective-I	PE-MTPX 101-107	3	--	0	48	3	30	1.5	20	100	3	50%	100
5	Program Elective-II	PE-MTPX 101-107	3	--	0	48	3	30	1.5	20	100	3	50%	100
6	Program Elective-III	PE-MTPX 101-107	3	--	0	48	3	30	1.5	20	100	3	50%	100
	Laboratory Courses													
7	Advanced Power Electronics Laboratory	PL-MTPX101	--	4	--	4	2	--	--	25	25	--	100%	50
8	Computer Aided Power System Analysis Laboratory	PL-MTPX102	--	4	--	4	2	--	--	25	25	--	100%	50
Indian Knowledge System Courses														
9	Indian Knowledge System	IK-MTPX#	2	--	--	32	2	30	1.5	20	50	2	100%	100
TOTAL			**19**	**8**	**1**		**24**							800

L: Lecture T: Tutorial P: Practical SL: Self Learning IE: Internal Evaluation
1 Credit corresponds to 30 Hours of student engagement in a semester. Apart from actual contact hours (L, T, P), the remaining hours are utilized for self-learning by students

Sardar Patel College of Engineering Andheri (West), Mumbai 400 058
Year: 2025-26

Scheme for F.Y. M. Tech. in Power Electronics and Power System (PEPS), (Semester - II) R23 Academic Year 2025-26														
SR. NO.	**Course Name**	**Code**	**Course Plan per Week (Hrs)**			**SL Hrs/ Sem**	**Credits**	**In Semester Evaluation**			**End Semester Evaluation**		**End semester weightage (%)**	**Total Points**
			L	**P**	**T**			**Mid Term (Points)**	**Mid Term Duration (Hrs.)**	**IE**	**Points**	**Time (Hrs.)**		
	Theory Courses													
1	Power System Dynamics and Control	PC-MTPX 201	3	--	--	48	3	30	1.5	20	100	3	50%	100
2	Advanced Control of Electrical Drives	PC-MTPX 202	3	--	--	48	3	30	1.5	20	100	3	50%	100
3	Seminar/ Mini Project	PC-MTPX 203	--	4	--	4	2	--	--	50*	50*	--	100%	100*
	Program Elective Course													
4	Program Elective-IV	PE-MTPX 201-206	3	--	1	64	4	30	1.5	20	100	3	50%	100
5	Program Elective-V	PE-MTPX 201-206	3	--	1	64	4	30	1.5	20	100	3	50%	100
	Open Elective Course													
6	Open Elective	OE-MTPX 201-208	3	--	--	48	3	30	1.5	20	100	3	50%	100
	Vocational and Skill Enhancement Course													
7	Power system dynamics and control Laboratory	SE-MTPX201	--	4	--	4	2	--	--	25	25	--	100%	50
8	Advanced Control of Electrical Drives Laboratory	SE-MTPX202	--	4	--	4	2	--	--	25	25	--	100%	50
9	Ability Enhancement Course	AE-MTPX#	2	--	--	32	2	30	1.5	20	100	3	50%	100
TOTAL			**17**	**12**	**2**		**25**							800

L: Lecture T: Tutorial P: Practical SL: Self Learning IE: Internal Evaluation
1 Credit corresponds to 30 Hours of student engagement in a semester. Apart from actual contact hours (L,T, P), the remaining hours are utilized for self-learning by students

Sardar Patel College of Engineering Andheri (West), Mumbai 400 058
Year: 2025-26

Scheme for S.Y. M. Tech. in Power Electronics and Power System (PEPS), (Semester - III) R23 Academic Year 2025-26															
SR. NO.	**Course Name**	**Code**	**Course Plan per Week (Hrs)**			**SL Hrs/ Sem**	**Credits**	**In Semester Evaluation**			**End Semester Evaluation**		**End semester weightage (%)**	**Total Points**
			L	**P**	**T**			**Mid Term (Points)**	**Mid Term Duration (Hrs.)**	**IE**	**Points**	**Time (Hrs.)**		
	Value Education Courses													
1	Value Education Course	VE-MTPX301-303	2	-	-	32	2	30	1.5	20	100	3	50%	100
Field or Community Engagement Project														
2	Field or Community Engagement Project	CEP-MTPX301	-	4	-		2	Continuous evaluation shall be defined by course instructor or activity evaluator						100
Internship/Dissertation														
3	Dissertation Phase - I	DS-MTPX 301	$4^{\#}+38$				14			100*	$200^{\$}$			300
TOTAL			**2**	**--**		**--**	**18**							**500**

- Contact hours with supervisor/mentor/guide = 4
* - Evaluation shall be based on one or more presentations during the semester. 50% weightage shall be for the report and remaining 50% shall be for presentations.
The evaluation shall be carried out by the allotted guide and at least one internal examiner
$ - 50% weightage shall be for the report and remaining 50% shall be for presentation. The evaluation shall be carried out by the allotted guide and at least one internal examiner.

Sardar Patel College of Engineering Andheri (West), Mumbai 400 058
Year: 2025-26

Scheme for S.Y. M. Tech. in Power Electronics and Power System (PEPS), (Semester - IV) R23 Academic Year 2025-26															
SR. NO.	**Course Name**	**Code**	**Course Plan per Week (Hrs)**			**SL Hrs/ Sem**	**Credits**	**In Semester Evaluation**			**End Semester Evaluation**		**End semester weightage (%)**	**Total Points**
			L	**P**	**T**			**Mid term (Points)**	**Mid Term Duration (Hrs.)**	**IE**	**Points**	**Time (Hrs.)**		
	Co-curricular Activity													
1	Co-curricular course/activity/ Stress Management by Yoga	CC-MTPX401	--	--	1	16	1	$$$$ Continuous evaluation shall be defined by course instructor or activity evaluator						100
Internship/Dissertation														
2	Dissertation Phase - II	DS-MTPX 401	$4^{\#}+38$			28	14			100*	$200^{\$\$}$			300
TOTAL				--			**15**							**400**

- Contact hours with supervisor/mentor/guide = 4
* - Evaluation shall be based on one or more presentations during the semester. 50% weightage shall be for the report and remaining 50% shall be for presentations.
The evaluation shall be carried out by the allotted guide and at least one internal examiner
$$ - 50% weightage shall be for the report and remaining 50% shall be for presentation. The evaluation shall be carried out by the allotted guide and at least one external examiner

Sardar Patel College of Engineering Andheri (West), Mumbai 400 058
Year: 2025-26

List of Program Elective – I, II, and III Courses (PE-MTPX101-107)

Sr. No.	Code	Elective	Sr. No.	Code	Elective
1.	PE-MTPX101	Distributed Generation and Micro Grid	6	PE-MTPX106	Optimization Techniques
2.	PE-MTPX102	Power Electronics Applications to Renewable Energy	7	PE-MTPX107	Electric Vehicle System Design
3.	PE-MTPX103	Modelling and Analysis of Electrical Machine	8		
4.	PE-MTPX104	Reliability Assessment of Power System	9		
5.	PE-MTPX105	Restructuring and Deregulation of Power System	10		

List of Program Elective – IV and V Courses (PE-MTPX201-206)

Sr. No.	Code	Elective
1.	PE-MTPX201	Advanced techniques in power system protection
2.	PE-MTPX202	Smart Grid Technologies
4.	PE-MTPX203	DSP Control in Power Electronics
5.	PE-MTPX204	Power Quality and FACTS
6.	PE-MTPX205	Nonlinear Control Theory
7.	PE-MTPX206	Renewable Energy Sources and Grid Integration

Sardar Patel College of Engineering Andheri (West), Mumbai 400 058
Year: 2025-26

List of Ability Enhancement Courses (AE-MTPX#)

Sr. No.	Code	Name of Course	Sr. No.	Code	Name of Course
1	AE-MTPX201	English for research paper writing	3	AE-MTPX203	Pedagogy Studies
2	AE-MTPX202	Personality Development through Life Enlightenment Skills.	4	AE-MTPX204	Related NPTEL/SWAYAM Courses

List of Indian Knowledge System (IK-MTPX#)

Sr. No.	Code	Name of Course	Sr. No.	Code	Name of Course
1	IK-MTPX101	Constitution of India	2	IK-MTPX102	Related NPTEL/SWAYAM Courses

List of Value Education Course (VE-MTPX#)

Sr. No.	Code	Name of Course	Sr. No.	Code	Name of Course
1	VE-MTPX301	Disaster Management	3	VE-MTPX303	Introduction to Sustainability and Sustainable Development
2	VE-MTPX302	Value Education			

Sardar Patel College of Engineering Andheri (West), Mumbai 400 058
Year: 2025-26

List of Open Elective Courses (OE-MTPX201-208)

Sr. No.	Code	Elective
1.	OE-MTPX201	Business Analytics
2.	OE-MTPX202	Industrial Safety
3.	OE-MTPX203	Operations Research
4.	OE-MTPX204	Cost Management of Engineering Projects
5.	OE-MTPX205	Waste to Energy
6.	OE-MTPX206	Linear Algebra and Matrix Computation
7.	OE-MTPX207	Project Management
8.	OE-MTPX208	Artificial Intelligence

Sardar Patel College of Engineering Andheri (West), Mumbai 400 058
Year: 2025-26

Evaluation for R23

1. For passing, student must secure minimum 50% marks in each course with all heads of passing taken together and minimum 50% marks in the end semester examination.

2. Department will offer online course as Program Elective or Open Elective courses subject to availability of a course on https://swayam.gov.in/, and NPTEL and availability of internal resources. The assessment criteria for these courses will be as per swayam / NPTEL. After evaluation grades will be awarded as per institute criteria. 2, 3 Credits will be assigned for online courses of 8 and 12 weeks respectively.

3. Assessment criteria for Laboratory/Tutorial work i.e. weightage for assessment shall be as follows: (i) Participation in Laboratory/Tutorial = 20% (ii) Journal/Drawing sheet/Sketch book = 40% (iii) MCQ/oral/test = 40% (5) L – Lecture P – Lab T - Tutorial

* 50 Marks for seminar / mini project evaluation and 50 for presentation. The seminar / mini project report should be evaluated by supervisor and at least one internal examiner.

* Note 1: 50 Marks for seminar / mini project evaluation and 50 for presentation. Note 2: The seminar report should be evaluated by supervisor and at least one internal examiner.

4. Mid-Semester: The courses under the category “Theory courses (PC, PE, OE)” and “Ability Enhancement Courses (AE)”. The evaluation is based on Mid Term Exam having 30% weightage. Any change in the same will be informed by the course instructor.

The courses under the category “Skill Enhancement”, “Value Education” and Indian Knowledge system”, the evaluation is based on activity , lab work, Presentation, Test, Mini project, Field project, Practical Examination, viva. This evaluation shall be conducted by course instructor.

5. IE: Internal Evaluation will be carried out by course instructor for 20 points. It is the continuous evaluation throughout the semester.

The evaluation will be based on minimum three of the following activities decided by course instructor. The maximum points that can be assigned to one activity will be 07. The course instructor needs to inform the students and head of the department about the activities those will be considered for IE and the points assigned to them in first week of semester. The course instructor will submit the internal evaluation points (out of 20 with activity wise break up) to examination section before the beginning of End Semester examination.

List of Activities: 1. Class Involvement 2. Assignments 3. Problem Solving 4. Mini project 5. Quizzes 6. Presentation 7. Oral

6. End semester evaluation: The courses under the category “Theory courses” and “Ability Enhancement Courses”. The evaluation is based on End semester examination of 100 points. **The end semester examination will cover all the modules of the course content.**

The courses under the category “Skill Enhancement”, “Value Education” and “Indian knowledge system”, the evaluation is based on lab assignment/ activity (Presentation, Test, Mini project, Field project, Practical Examination).

7. $$$$ The evaluation for Co-curricular course/ activity shall be defined by course instructor or activity evaluator. The evaluation of points shall be carried out throughout the semester and the grade Pass/ No pass will be awarded which will not be considered for CPI calculation.

Note: Refer Academic and Examination rules and regulations for further details.